TENNESSEE DEPARTMENT OF EDUCATION
FIRST TO THE TOP

Computer Applications

Primary Career Cluster:	Business Management & Administration
Consultant:	Joy Smith, (615) 532-6248, Joy.Smith@tn.gov
Course Code(s):	5891, 3638, 3721
Prerequisite(s):	None
Credit:	1
Grade Level:	8-12
Graduation Requirements:	This course satisfies one of three credits required for an elective focus when taken in conjunction with other Business or Finance courses.
Programs of Study and Sequence:	This is the first course in all programs of study within the *Business Management & Administration* and *Finance* career clusters.
Necessary Equipment:	Computer laboratory
Aligned Student Organization(s):	DECA: http://ww.decatn.org; FBLA: http://ww.fblatn.org Sarah Williams, (615) 532-2829, Sarah.G.Williams@tn.gov
Coordinating Work-Based Learning:	If a teacher has completed work-based learning training, appropriate student placement can be offered. To learn more, please visit http://www.tn.gov/education/cte/wb/.
Available Student Industry Certifications:	Yes
Dual Credit or Dual Enrollment Opportunities:	Some local dual enrollment/dual credit opportunities exist. Please check with the local college of applied technology or community college for options.
Teacher Endorsement(s):	037, 039, 041, 055, 057, 202, 203, 204, 311, 430, 431, 432, 434, 435, 436, 474, 475, 476
Required Teacher Certifications/Training:	None
Teacher Resources:	http://www.tn.gov/education/cte/BusinessManagementAdministration.shtml http://www.tn.gov/education/cte/Finance.shtml

Course Description

Computer Applications is a foundational course intended to teach students the computing fundamentals and concepts involved in the proficient use of common application software. Upon completion of this

course, students will gain basic proficiency in word processing, spreadsheets, databases, and presentations. In addition, students will have engaged in key critical thinking skills and will have practiced ethical and appropriate behavior required for the responsible use of technology. Standards in this course are aligned with Tennessee Common Core State Standards for Literacy in Technical Subjects and Tennessee Common Core State Standards in Mathematics.*

Program of Study Application

This is the foundational course for all programs of study within the *Business Management and Administration* and *Finance* career clusters. For more information on the benefits and requirements of implementing these programs in full, please visit the Business Management and Administration and Finance websites at:

- Business Management & Administration: http://www.tn.gov/education/cte/BusinessManagementAdministration.shtml
- Finance: http://www.tn.gov/education/cte/Finance.shtml

Course Standards

Communication Networks, the Internet, and Technology Operations

1) Research recent developments in information technology affecting the supply/demand characteristics of the job market, including career pathways and occupational outlooks for occupations in business and finance that require information technology expertise. Synthesize findings into a presentation highlighting the typical roles and responsibilities of professionals in high-growth occupations. (TN CCSS Reading 1, 2, 7, 9; TN CCSS Writing 4, 6, 7, 8, 9)

2) Identify, connect, and demonstrate the correct usage of elements of a typical home computer, including a monitor, keyboard, mouse, network cable, and USB devices (such as camera, memory, or scanner). Perform basic troubleshooting as needed for situations involving these components (e.g., if the computer does not recognize a device). (TN CCSS Reading 3, 4)

3) Correctly and safely execute basic file management operations on a typical personal computer and shared storage media, including the opening, creating, copying, moving, deleting, and renaming of files and folders, as well as searching for a specified file or folder on local or networked storage media. (TN CCSS Reading 3)

4) Describe and demonstrate the correct connections and setup for a new wireless router in a home computing environment. Discuss the impact of network speeds, wireless communication, firewalls, and gateways on individual and societal productivity. (TN CCSS Reading 3, 4)

5) Discern the need for and perform the steps necessary to retrieve, download, and safely install new applications, updates, and plug-ins from the Internet. (TN CCSS Reading 3)

6) Compare and contrast the accessibility of the Internet through a home router versus through a public wi-fi access point. Discuss the risks and advantages of using secure home networks versus publicly accessible networks. (TN CCSS Reading 1, 4, 8, 9)

7) While preparing materials and assignments in this course, use a browser to access and download Internet resources by uniform resource locator (URL), hyperlink, or favorite/bookmark.

Word Processing and Publishing

8) Use a word processing program to create and format documents with academic and business styles (e.g., memos, letters, agendas, reports, tabular lists) to communicate the results of research, meetings, lab reports, and relevant assignments in this course. (TN CCSS Reading 3, 7; TN CCSS Writing 2, 4, 6)

9) Craft documents using word processing program features and methods such as:
    a. Paragraph formatting (line spacing, justification, indentations)
    b. Bulleted and numbered lists
    c. Tables of multiple columns, with and without borders
    d. Margins, headers, footers, page numbers, and footnotes
    e. Typeface fonts and weights, including hyperlinks
    f. Capitalization, punctuation, number expression, grammar
    g. Printing orientation, one- or two-sided, to a selected printer
    h. Bibliographies and tables of contents
    i. Saving to a file that can be shared and/or transported, including saving to cloud-based or external sources

    (TN CCSS Reading 3, 4, 7; TN CCSS Writing 2, 4, 6)

10) Enhance created or edited documents by including graphic arts components such as borders and shaded elements, graphs and charts from other programs, watermarks, and imagery imported from mobile devices and drives as well as sources retrieved from the Internet, including adding citations and/or captions for each element when appropriate. (TN CCSS Reading 3, 7; TN CCSS Writing 4, 5, 6)

11) Create, format, and edit documents suitable for print or electronic distribution, both four-color and two-color (black and white). (TN CCSS Reading 3; TN CCSS Writing 4, 5, 6)

12) Critique and edit existing documents with standard proofreading and editing marks to conform to a standard business style guide (e.g., fonts, colors, line spacing). Practice the use of electronic revision marks and comments, where supported. (TN CCSS Reading 1, 2, 5, 6, 8, 9; TN CCSS Writing 4, 5, 6)

13) Complete a comprehensive word-processing project with instructor approval that applies the skills acquired in this section. For example, prepare a contract, proposal, or end-of-month financial report for a small business. (TN CCSS Writing 4, 6, 7)

Spreadsheet Applications

14) Use a spreadsheet program to create and format academic and business documents for the purposes of tabulating and calculating numerical and/or textual data (e.g., statistics, historical

data, measurements), such as budget calculations, sales reports, lab data, and related analyses. (CCSS Reading 1, 3, 4, 5, 7, 9; TN CCSS Writing 4, 6; TN CCSS Math*)

15) Craft documents using a spreadsheet program using features and methods such as:
    a. Cells, columns, and rows
    b. Formulas and functions
    c. Copy, move, delete, and fill
    d. Cell-value formats (numerical and text) and alignment
    e. Column and row width/height, insert/delete, move
    f. Printing to a selected printer
    g. Saving with a file format that can be shared and/or transported

    (TN CCSS Reading 3, 4, 5; TN CCSS Writing 4, 6; TN CCSS Math*)

16) Create new formulae to analyze data by calculating with, extracting from, presenting, and/or summarizing, including:
    a. Basic arithmetic calculations
    b. Basic mathematic (e.g., SUM, AVG, MIN, MAX) and text (e.g., LEN, LEFT, RIGHT, MID) functions
    c. Copying formulae that include both relative and absolute cell references
    d. Sorting in ascending/descending order
    e. Filtering data to retrieve specific values
    f. Basic conditional formatting (e.g., red for negative values)

    (TN CCSS Reading 3, 4, 5; TN CCSS Writing 6; TN CCSS Math*)

17) Create and format for optimal clarity a variety of types of graphs and charts, including bar charts, line charts, pie charts, and X-Y graphs, based on tabulated data. (TN CCSS Reading 3, 4, 7; Writing 4, 5, 6; TN CCSS Math*)

18) Retrieve a spreadsheet template (from those installed with the program or from the Internet) and customize it for a particular assignment approved by the instructor. For example, prepare a "timecard" of one's daily hours spent on a month-long job assignment. (TN CCSS Writing 6)

Database Applications

19) Use a database program to interpret the structure of an existing database (found in teaching resources or teacher-created), identifying tables, fields, key fields, queries, forms, and reports. (TN CCSS Reading 1, 3, 4, 5, 7)

20) Using an existing database (found in teaching resources or teacher-created), create and run a database report based on basic queries. For example, retrieve the relevant information to answer a customer product inquiry during a mock customer service phone call. (TN CCSS Reading 3; TN CCSS Math*)

21) Using an existing database (found in teaching resources or teacher-created), create, modify, and perform basic queries through a form to create a new table/view in a database. (TN CCSS Reading 3; TN CCSS Math*)

Presentation Software

22) Design, create, and deliver an oral presentation for a selected audience on a topic approved by the instructor. Using a specified slide number and duration, include the following elements:
    a. A selected theme (colors, background, fonts, etc.)
    b. Bulleted text based on a chosen style
    c. Photographs and other imagery
    d. Charts and graphs
    e. Video and animated graphics
    f. Animated transitions of slides and components within a slide

    Save the file in a format that can be transported and shared with the audience. (TN CCSS Writing 4, 6, 7)

23) Design, create, and deliver a self-running electronic slideshow for a selected audience on a topic approved by the instructor. Using a specified slide number and duration, include the following elements:
    a. A selected theme (colors, background, fonts, etc.)
    b. Photographs and other imagery
    c. Video and animated graphics
    d. Animated transitions of slides

    Save the file in a format that can be transported and shared with the audience. (TN CCSS Writing 4, 6, 7)

Digital Citizenship

24) Research, summarize, and deliver (via presentation, document, spreadsheet data/chart, or other format) a summary of the various perspectives and ramifications surrounding an ethical issue related to modern-day electronic communications, as approved by the instructor. Develop and strengthen claim(s) and counterclaim(s) about the issue, citing supportive evidence. Potential issues include spam, flaming, cyberbullying, libel, slandering, and mining of personal data for profit. (TN CCSS Reading 1, 2; TN CCSS Writing 1, 4, 6, 7)

25) Research, summarize, and deliver (via presentation, document, spreadsheet data/chart, or other format) a summary of the various perspectives and ramifications surrounding an ethical issue related to intellectual property rights, as approved by the instructor. Develop and strengthen claim(s) and counterclaim(s) about the issue, citing supportive evidence. Potential issues include copyright infringement, piracy, plagiarism, art licensing, creative commons, and the state/federal laws that govern them. (TN CCSS Reading 1, 2; TN CCSS Writing 1, 4, 6, 7)

26) Explain, furnish examples, and demonstrate technical literacy with the following terms:
    a. The Internet, World Wide Web, and various browsers
    b. Network speeds, wireless communication, firewalls, and gateways
    c. Domains, hyperlinks, homepages, favorites/bookmarks, plugins, tabs, and downloads/uploads

Electronic Communication and Collaboration

27) Employ skills covered in this course (document processing, spreadsheet applications, electronic presentations, databases, Internet fluency) to complete a cross curricular project approved by the instructor. (TN CCSS Writing 6, 7)

Standards Alignment Notes

*References to other standards include:

- TN CCSS Reading: Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects; Reading Standards for Literacy in Science and Technical Subjects 6-12 (page 62).
    - Note: While not directly aligned to one specific standard, students who are engaging in activities outlined above should be able to also demonstrate fluency in Standard 10 at the conclusion of the course.
- TN CCSS Writing: Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects; Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6-12 (pages 64-66).
    - Note: While not directly aligned to one specific standard, students who are engaging in activities outlined above should be able to also demonstrate fluency in Standards 3 and 10 at the conclusion of the course.
- TN CCSS Math: Common Core State Standards for Mathematics; Math Standards for High School: Numbers and Quantity, Algebra, Functions, Statistics and Probability.
    - Note: The standards in this course are not meant to teach mathematical concepts. However, the concepts referenced above may provide teachers with opportunities to collaborate with mathematics educators to design project-based activities or collaborate on lesson planning, depending on the projects used in each situation (for example, spreadsheets). Students who are engaging in activities listed above should be able to demonstrate quantitative, algebraic, functional, and statistical reasoning as applied to specific technical concepts. In addition, students will have the opportunity to practice the habits of mind as described in the eight Standards for Mathematical Practice.
- P21: Partnership for 21st Century Skills Framework for 21st Century Learning
    - Note: While not all standards are specifically aligned, teachers will find the framework helpful for setting expectations for student behavior in their classroom and practicing specific career readiness skills.